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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,818	04/26/2005	Christophe Labreuche	4590-395	9375

33308	7590	09/01/2006	

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EXAMINER
BROWN JR, NATHAN H

ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 09/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *(3)* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2005*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *4/26/05*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Examiner's Detailed Office Action

1. This Office Action is responsive to application 10/532,818, filed April 26, 2005.

2. Claims 1-17 have been examined.

Objections to the Claims

3. Claim 1 is objected to because of the following informalities: "nonclearly" should be --non-clearly--. Appropriate correction is required.

Claim Rejections - 35 USC § 112, 2nd

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 critically relies on the notion of "a compensation condition". The closest to a definition of "compensation condition" we get is (p. 4, col. 1, para. 43) of the Application. Examiner finds this definition (or formalization) to be circular in that 'compensation' is used to define itself in the term "fuzzy compensation". Therefore the key definition in the invention is

indefinite as it fails to particularly point out and distinctly claim "compensation condition" and

"fuzzy compensation".

In addition, claim 1 recites:

> 1. A method of decision making by an expert system in the absence of clearly identifiable
> rules, according to which this system one establishes decision making rules comprising at
> least two variables for each of which at least one limit is not strict, comprising the steps
> of: asking questions with a view to allowing the system to introduce a compensation
> condition into the nonclearly identifiable rules; determining one expert with the system,
> for each parameter of a compensatory condition, at least one particular point belonging to
> a compensation boundary and connected with the parameter; and deducing the system
> therefrom the value of the parameters, that it one applies the set of rules and that it that
> one deduces the decision therefrom.

Here the syntax of "this system one establishes decision making rules" raises the question, for

the Examiner, of whether: "this system ... establishes decision making rules" or "one

establishes decision making rules". Examiner presumes "one" to be the user of the system.

Examiner assumes that "this system one establishes decision making rules" means 'with this

system, one establishes decision making rules'.

The claim further recites: "asking questions with a view to allowing the system to introduce a

compensation condition into the nonclearly identifiable rules". The question here is: who is

asking the questions, a user of the system or the system itself?

The claim further recites: "determining one expert with the system, for each parameter of a

compensatory condition, at least one particular point belonging to a compensation boundary and

connected with the parameter". Examiner cannot understand the syntax of this clause at all. Is

there "one expert" for "each parameter of a compensatory condition"? What does that mean:

one human expert for each parameter or one expert system for each parameter?

The claim further recites: "and deducing the system therefrom the value of the parameters, that

it one applies the set of rules and that it that one deduces the decision therefrom." Examiner

questions what is being deduced: an expert system for deducing a decision from the value of the

parameters, an expert human for deducing a decision from the value of the parameters, the value

of the parameters from an expert system? Further, what does "that it one applies the set of rules"

mean? Who or what applies the rules: the expert system, a user of the expert system, an expert

on one of the parameters?

Examiner believes that there is a problem in translation and therefore makes the following

interpretation of independent claim 1 (from p. 2, col. 1, para. 13) of the Application:

> 1. A method of decision making by an expert system in the absence of clearly identifiable
> rules, according to which the system, comprising the steps of:
>
> establishing decision making rules comprising at least two variables for each of which at
> least one limit is not strict (i.e., where conditions on the variable value thresholds may be
> violated);
>
> asking questions to allowing the system to introduce a compensation condition into the
> non-clearly identifiable rules;
>
> determining for each parameter of a compensatory condition, at least one particular point
> belonging to a compensation boundary connected with the parameter;
>
> deducing the value of the parameters for the set of rules used to deduce the decision; and
>
> deducing a decision from the set of rules.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1-17 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter: mathematical algorithm and/or software. Claims 1-17 are method or process claims. No result recited in claims 1-17 changes the state of any real world event or object. Further, no claim recites a specific, substantial, and credible utility. Also, no claim recites more than the §101 judicial exception of abstract idea, i.e., decision rules, compensation condition, compensation boundary, fuzzy premise conditions, degrees of possibility, etc. In addition, given the §112, 1st and §112, 2nd problems cited above, it is difficult to see how any results would be substantially repeatable at the compensation boundaries in real world problem domains where different experts could render different answers to the question of "which value of the last variable is the singular point situated exactly on the boundary between two zones." Thus the claims are neither useful, tangible, or concrete and are therefore nonstatutory under 35 U.S.C. 101.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Tomita*, "Assessing a text-critical database using AI techniques", 1996 in view of *Tzes et al.*, "Genetic-Based Fuzzy Clustering for DC-Motor Friction Identification and Compensation", 1998, and further in view of *Botteldooren et al.*, "Fuzzy models for accumulation of reported community noise annoyance from combined sources", 2002.

Regarding claim 1. *Tomita* teaches a method of decision making by an expert system in the absence of clearly identifiable rules (*see* §Stage 2: Knowledge Elicitation and Representation, "the decision process by copyists can be very complicated, for there can be multiple factors for their consideration, some of which could be weighed differently and others could give contradicting desires. Thus it is necessary to measure the probabilities in all the possible ideas that contribute to the decision whether or not to supply an accidental at the very spot on the stave. By taking the approach of neuro-scientific model of simulating the decision making process, our example can be represented in the form of neural connections"), according to which the system, comprising the steps of: establishing decision making rules comprising at least two variables for each of which at least one limit is not strict (i.e., where conditions on the variable value thresholds may be violated) (*see* EXAMPLE 2: THE DECISION MAKING MODEL IN THE FORM OF NEURON, *Examiner interprets the input "factors" to be variables with no strict limits.*); deducing a decision from the set of rules (*see* EXAMPLE 2: THE DECISION

MAKING MODEL IN THE FORM OF NEURON, *Examiner interprets each rule to be a neuron.*).

Tomita does not disclose determining for each parameter of a compensatory condition, at least one particular point belonging to a compensation boundary connected with the parameter; and deducing the value of the parameters for the set of rules used to deduce the decision.

Tzes et al. do teach determining for each parameter of a compensatory condition, at least one particular point belonging to a compensation boundary connected with the parameter (see p. 471, col. 2 to p. 472, col. 1, "the spikes shown in Fig. 10 at the boundaries of the region corresponding to the boundary lubrication regime ... "); and deducing the value of the parameters for the set of rules used to deduce the decision (*see* p. 465, col. 2, "The solution in this research is reflected by the parameter values (genes) in the 4J-dimensional string (chromosome).").

However, neither *Tomita* nor *Tzes et al.* teach asking questions to allowing the system to introduce a compensation condition into the non-clearly identifiable rules.

Botteldooren et al. do teach asking questions to allowing the system to introduce a compensation condition into the non-clearly identifiable rules (*see* p. 1496, col. 2, "It makes sense to use the opinion of the public as a guideline for this aggregation.", *Examiner interprets "aggregation" to be a type of compensation and "the opinion of the public" to be the result of asking questions in public opinion surveys.*).

It would have been obvious at the time the invention was made to persons having ordinary skill in the art to combine *Tomita* with *Tzes et al.* to fine-tuning model parameters through a genetic

algorithm which minimizes a system modeling relevant functional. It would have, further, been obvious at the time the invention was made to persons having ordinary skill in the art to combine *Tomita* with *Botteldooren et al.* to provide a way to treat noise in the expert system based on a known, in context, rating of annoyance by particular sources.

10. Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over *Tomita* in view of *Tzes et al.* and *Botteldooren et al.* and further in view of *Pal et al.*, "Fuzzy Rule Extraction From ID3-Type Decision Trees for Real Data", 2001.
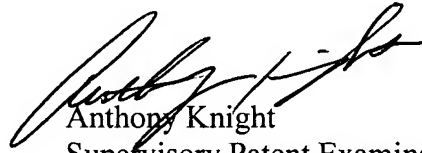
Regarding claim 10. *Tomita* teaches a method of decision making by an expert system in the absence of clearly identifiable rules. *Tomita* does not teach a rule base that corresponds to a decision tree. *Pal et al.* teach a rule base that corresponds to a decision tree (*see* Abstract). It would have been obvious at the time the invention was made to persons having ordinary skill in the art to combine *Tomita* with *Pal et al.* to get a tree with less redundancy and hence a smaller rule-base.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan H. Brown, Jr. whose telephone number is 571-272- 8632. The examiner can normally be reached on M-F 0830-1700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 571-

272-3687. The fax phone number for the organization where this application or proceeding is

assigned is 703-872-9306. Information regarding the status of an application may be obtained

from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more

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on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-

9197 (toll-free).

Anthony Knight
Supervisory Patent Examiner
Tech Center 2100

Nathan H. Brown, Jr.
August 30, 2006